

# US-USSR Joint Mission Plans Move Ahead

Cooperation between Americans and Soviets involved in the Apollo-Soyuz space mission has gone two steps further.

First, American space officials will be permitted into a Soviet mission control center for the first time during the Apollo-Soyuz test project (ASTP).

"Whenever it is necessary, American specialists will participate in the control of the flight of the spacecraft," Konstantin Burshuyev, Soviet technical director of the project said.

Also, the USSR Academy of Sciences and NASA announced plans to participate in a joint exhibit of the Apollo-Soyuz Test Project at the Paris Air Show, May 24, to June 3, 1973.

Representatives of the two agencies agreed to exhibit actual size models of the U. S. and USSR spacecraft involved in the first international coopera-

tive manned mission scheduled for mid-1975. The project provides for an earth orbital mission during which Soviet cosmonauts and American astronauts will test a compatible rendezvous and docking system which will permit possible future cooperation in manned space flight.

The Apollo/Soyuz Test Project was authorized in an agreement between the two countries on cooperation in the exploration and peaceful uses of outer space signed by President Nixon of the U.S.A. and Premier Kosygin, Chairman of the USSR Council of Ministers on May 24, 1972.

The Apollo and Soyuz spacecraft will be displayed in a docked configuration in a special pavilion at the 30th International Aerospace Exposition at Le Bourget.

# ROUNDUP

NASA LYNDON B. JOHNSON SPACE CENTER

HOUSTON, TEXAS



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ASTRONAUT CONVERSING WITH COSMONAUTS—Astronaut Thomas Stafford, left, talks with Soviet cosmonauts Vladimir Shatalov and A. S. Yeliseiyev, right, at JSC. The cosmonauts were among a 39-member Soviet delegation here for meetings on the joint U.S. - Soviet space flight.

## Hospital to Open Soon

Dedication ceremonies preceding the opening of the Space Center Memorial Hospital will be Sunday, April 15, 1973 at 2:00 p.m., Stewart Morris, Chairman of the Board of Trustees for the hospital announced recently.

The Space Center Memorial Hospital is chartered by the State of Texas as a non-profit community hospital. As such it receives no financial support for the daily operation of the hospital from City, County, State or Federal Tax revenues.

The source of operating funds will be obtained through revenue received from patient care charges, gifts, pledges or trust funds received from former patients, friends of the hospital, industry and philanthropy.

The hospital will be dedicated

as a memorial to the vision, courage and selfless achievement of all men and women that have been associated in the support of space exploration programs—especially the astronauts and their families.

Located at Space Park Drive and Hospital Blvd, directly across from the main entrance to JSC, the hospital will operate as an open-staff, full service community hospital, including an emergency department.

The Board of Trustees of the hospital are Stewart Morris, Theo Dora Heyne, Worth McCauley, Thomes Wier, Richard Chandler, Jr., Maggie DeNike, Phillip T. Hamburger, John Minniece, Robert Scoot and L. W. Warzecha.



CORDIAL GREETINGS—Governor Bill Daniels and Soviet cosmonaut Vladimir A. Shatalov greet each other with a friendly embrace during the gala festivities at the Governor's Plantation Ranch, March 25, 1973. Daniels, one-time Governor of Guam, entertained visiting Soviets with a barbecue, rodeo, wild west show and other activities. Governor Daniels is the brother of former Governor of Texas Price Daniels.

## Atkinson To Head EEO Office



JOSEPH D. ATKINSON, JR.

Joseph D. Atkinson, Jr. a member of NASA since 1964, has been named Chief of the Equal Employment Opportunity Office at JSC.

As head of EEO, Mr. Atkinson will be responsible for planning and conducting all JSC Equal Employment Opportunity programs relating to Center employees and contractors.

Mr. Atkinson began his NASA career as an administrative assistant in the Technical Services Division, and also served as a personnel management specialist.

In 1970, he was selected to staff an office which set up an equal opportunity program for contractors.

Atkinson graduated from Morehouse College, Atlanta Georgia, in 1949, with a Bachelor of Arts degree. He also studied at the Harvard Graduate School of Business, Cambridge, Massachusetts and at the University of Houston College of Business Administration.

He entered government service as a management intern at Kelly Air Force Base, San Antonio, Texas. Prior to that time he served for four years with the United States Army.

He was honored on November

## Rocks Exchanged

Rock and soil samples from the Descartes and Taurus-Littrow lunar landing sites were delivered to two representatives of the Academy of Sciences of the Soviet Union during their visit here. The moon fragments were collected by U. S. astronauts during the Apollo 16 and 17 missions.

The handover of three grams from each mission was made by Dr. Paul Gast, Chief of Planetary and Earth Sciences Division of JSC. The samples were accepted by Vladimir Shcherbina and Lev Tarasov of the Academy of Sciences of the USSR Vernadsky Institute.

Shcherbina and Tarasov delivered scientific papers at the recent-completed Fourth Annual Lunar Science Conference at JSC.

JSC Lunar Sample Curator Dr. Michael Duke said that the samples presented the widest variety

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FRIENDSHIP-DANCE—The Soviet cosmonauts and scientists who met at JSC were truly "Texans for a day" when they visited the ranch of Governor Bill Daniels near Liberty on March 25, 1973. Cosmonauts Vladimir A. Shatalov and Aleksey S. Yeliseiyev (center) joined the Coushatta Indians in a Friendship Dance at Plantation Ranch. Joining the fun also were Astronaut Bob Overmyer (left) and Soviet Engineer I. V. Lavrow (right).



LUNAR SAMPLE HANDOVER—Six grams (about two-tenths of an ounce) of Moon material gathered on Apollo 16 and 17 are presented by Dr. Paul Gast, 2nd from left, to Dr. Lev Tarasov of the Academy of Sciences of the Soviet Union during handover ceremonies March 16 at JSC. In the ceremony photo, left to right are Dr. Michael Duke, JSC Lunar Sample Curator; Gast; Tarasov; and Dr. Vladimir Scherbina, also of the Vernadsky Institute of the Academy of Sciences of the USSR.

## CLSC Conducts Free Sailing Lessons

The Clear Lake Sailing Club will conduct free sailing instructions for beginners, Rex Ritz, CLSC publicity chairman announced. The lessons will include three Friday night sessions of classroom training and three Saturday morning on-the-water classes.

Classroom lessons will be held March 30, April 6 and April 13 at 7:15 p.m.; on the water training will be held at 9:30 a.m. March 31, April 7 and 14. All of the classes will take place at Harris county Park, 5001 NASA Road 1.

Coming activities for the CLSC include several boat races which

will be held March 31, April 14 and May 5 and 19. Skipper's meetings will be held at the T Pier, Harris County Park at 10:30 a.m. on the day of the races.

Spring series of races for 1973 include privately owned and rented Dolphin Seniors, Sunfish, Windmill, Banshee, Snipe, Hobie 14, Dolphin 17 and a handicap class.

Ritz said the CLSC is currently accepting applications for membership. Annual dues are \$10 per person.

For more information concerning CLSC contact Ritz at 333-3440 or Malcolm Jones, club president, at 471-3303.

## Toastmasters Sponsor Speech Course

The JSC Toastmasters Club is now conducting its sixth annual Speechcraft course. The class meets every Tuesday evening at 6:30 p.m. at the Ramada Inn on NASA Road one.

Graduation ceremonies for the eight-week course are planned for April 3 at the Ramada Inn.

JSC employees participating include Stanley G. Avent, Ben Reina, Jr. and James W. VanArtsdalen. Toastmasters Jack H.

Cohen and David N. Holman are the Speechcraft coordinators.

Over 3,000 man-hours annually are estimated to be spent by JSC Toastmaster members in their weekly meetings.

Any area resident is eligible for membership in the JSC Toastmaster Communication and Leadership program. For membership information, contact vice-president Roy Thompson, 482-3651.

## ROCKS

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of soil and distinct rock types from Apollo 16 and 17.

The exchanges of samples from lunar landing missions is part of an agreement between the two countries for joint study of lunar material. The Soviets have also received samples from Apollo 11, 12, 14 and 15.

The United States has received samples from the Soviet Union's unmanned Luna 16 and 20 spacecraft which brought back to earth samples of soil from the Moon's Sea of Fertility.

## Club Plans

### Pilot Training

The Aero Club is planning to conduct two pilot training programs this Spring. In addition to the Sanderson private pilot audio-visual ground school (\$20) offered in the past for student pilots and non-pilots interested in learning about flying, the Club is initiating a complete ground/flight instrument training course.

The new IFR (instrument flight rules) course is intended for more experienced pilots who want to acquire an instrument rating for use in higher performance aircraft, in today's modern ATC system. Completion of the course will satisfy all FAA basic requirements for the instrument rating. Flight instruction will be by an FAA certified instrument flight instructor and will emphasize training in actual IFR weather conditions as much as possible. Flight instruction will include training in a high performance, retractable gear aircraft (Beechcraft Bonanza). Pilot experience prerequisites should include approximately 170 hours total flying time, including approximately 50 hours cross country. The flight course will be tai-

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# 22 Receive Awards

Periodically, JSC employees become eligible to receive length of service awards which are presented to persons who have been employed by the federal government 25 years or more.

JSC Director Christopher C. Kraft recently presented such awards to the following persons:

### ADMINISTRATION & PROGRAM SUPPORT DIRECTORATE

Parker L. Carroll	30 years
Douglas R. Hendrickson	30 years
Thomas L. Johnston	30 years
Walter H. Meek, Jr.	30 years
Roy C. Aldridge	25 years
Stephen D. Armstrong	25 years
Modena C. Baker	25 years
James J. Shannon	25 years

### SKYLAB PROGRAM OFFICE

LaRue M. Farris	30 years
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### ENGINEERING & DEVELOPMENT DIRECTORATE

Margaret L. Hopkins	30 years
Charles C. Lutz	30 years
Richard W. Bricker	25 years
Robert G. Chilton	25 years
James A. Parker	25 years

### CENTER OPERATIONS DIRECTORATE

Patrick M. Gill	30 years
Richard J. House	30 years
Lewis A. Wilde	25 years

### SAFETY, RELIABILITY & QUALITY ASSURANCE OFFICE

James E. Eaton	35 years
Mattison G. Brown	30 years
Paul V. Lucas	30 years
John J. Fitzgerald	25 years
Lemuel Menear	25 years

# Costs Remain Same

On the surface it appears that not a single item has escaped the cost of living increases that are presently sweeping the nation at all-time highs. Closer examination, however, proves there is one exception; that is the premium on NEBA Group Life Insurance.

The slight increases that have occurred in the last several years have been absorbed by NEBA. The cost to the member has not increased.

Two important factors affect the cost of insurance; one is experience and the second is participation. Good experience in life insurance is low death claims over which no one has control. Participation is something else. Thus NEBA has adopted the slogan—"Don't Vacillate—Parti-

pate—Join the NEBA Insurance Plan."

Presently, one out of each two eligible JSC employees is not a member of NEBA. The more employees that participate, the more assurance there is for the continuation of low rates.

The cost per month per thousand dollars of life insurance for the employee is a little more than 1.4 cents per day per thousand dollars of life insurance.

Dependent's coverage is either \$2.65 (\$2,500 spouse coverage) or \$4.65 (\$5,000 spouse coverage) per quarter. The cost is the same for spouse or spouse and children.

To request application forms for NEBA life insurance, call extension 5410.

## Choir To Participate in Festival

The Clear Lake Symphonic Choir will participate in "The Festival of Three Cities" which comprises the opening week of Youth and Music in Vienna. The Festival, which begins June 29, is devoted to orchestras, ensembles, choirs, ballet and folk groups.

Milton Pullen, Director of Choral Music at Clear Lake High School, was one of the 23 directors chosen from the entire North American continent and Hawaii, and was selected from among more than 100 directors who submitted concert

tape recordings to the National Educational Scholarship Foundation. Pullen chose the 50-voice Clear Lake Symphonic Choir as the group he would like to take.

Following a week in Vienna, the groups will spend a second week visiting neighboring cities of Budapest, Hungary and Prague, Czechoslovakia for concerts, youth meetings and receptions, affording a rare exposure to central European culture.

Choirs may participate in a joint choral/orchestral concert under a distinguished guest conductor, among other events.



ALL STARS—The JSC All Stars, representing the Houston area, recently won the Beaumont Invitational Volleyball Tournament. Pictured left to right are Harry Moore, Dennis Doherty, John Waters, Jerry Greif, Phil Woodruff and Wayne Whittington. Absent were Dave Dyer and Mike Conway.

# ROUNDUP

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HOUSTON, TEXAS



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Editor: Janet Wrather

Photographer: A. "Pat" Patnesky

## EAA Plans Hunt

The Annual Easter Egg Hunt will be held at JSC's Recreation Center Area Saturday, April 14, 1973 at 1:00 p.m. for children ages 2-8. The price is \$.50.

Prizes will be awarded to children who find the most eggs and a special prize will be given for the Golden Egg.

Easter Egg baskets will be furnished. After the hunt each child will be given some Easter goodies and eggs.

In case of rain, distribution of candy and eggs will be made from Cafeteria No. 1 from 1 p.m. to 2 p.m.

Tickets are available through EAA representatives and Cafeteria sales.

## Group Performs

The Clear Lake Youth String Ensemble will provide an evening of listening for children and adults on April 9 at 7:30 p.m. at Clear Lake Elementary School, Clear Lake City.

The ensemble will use the Suzuki method in their renditions wherein emphasis is placed on memory work.

Members of the Ensemble are Jeannie Flanders, Alissa Grave, Gregg Grave, Christina Jackson, Craig Jones, Elizabeth Morgan, Harold Morgan, Margaret Schlitt, Ruthie Schramm, Steve Schramm, Susan Seabrook, Mark Stanley, Todd Stanley, Scott Van Slyke, and Steve Walkinshaw.

All persons in the JSC area are invited to bring their children to the performance.

### JIMMY WARREN BOWLING LEAGUE

Hexes	61	39
Jokers	60	40
Spoilers	56	44
Ascenders	55	45
Pin Pounders	55	45
Ball Busters	55	45
Strikeouts	54	46
Clowns	50½	49½
Chokers	46½	49½
Fabricators	43½	56½
Hertz	41½	58½
Alley Oops	38	62
Mixers	43	57
Team No. 9	37	59

### INDIVIDUAL SCRATCH HIGHS

	Set	G
Don Grossville	653	236
Jim Lawrence	645	255
Dan Kennedy	662	248
Whitey Herring	607	210
John Lottinville	605	234
Bailey Chaney	605	211
Cecil Dorsey	601	212
Carl Grimm	600	247

Team high for the night went to the Pin Pounders with a 3110-

## Atkinson

(Continued From Page 1)

27, 1972, with a Superior Achievement Award.

Atkinson is married to the former Arnette Sayles of Birmingham, Alabama.

# Roundup Swap-Shop

Swap Shop advertising is available to JSC and on-site contractor personnel. Articles or services must be offered as advertised, without regard to race, religion, sex or national origin. Ads should be 20 words or less, including home telephone number. Name and office code must accompany, but need not be included in ad copy. Typed or printed copy must be received (AP3 Attn: Roundup) by Thursday of the week before publication.

### MISCELLANEOUS

Haig ultra golf clubs, 4 woods, 9 irons, \$75, Puffer, 488-4466.  
3-yr baby crib w/ mattress, gd cndn, \$5, 333-3512.

6 dining chairs, mahog finish, xlnt cndn, \$120, 2 tea tables solid mahog, \$75, 1 table or vanity, v. old, inlaid, \$40, 333-4036.

Set golf clubs & bag, (Spaulding), irons, 2-9 plus putter, Woods 1-3, \$40, Patino, 944-5299 aft 6 p.m.

Misc shop tools, drills, saws, hand tools, etc. Smith, 488-3238.

Heath HW-16 cw transceiver, ideal novice rig in xlnt cndn, \$75, Fred Machell, 334-3330.

Toshiba Electronic Calculator, 16 digits and memory, \$650, cost \$1100 new, Smith, 488-3238.

Wcman's diamond, solitaire mounted, weight, 72 pts, appraised 1969, \$735, sell for 25% off appraisal, 1969, \$735, sell 5973 or 482-1532 aft 7 p.m.

Lawn mower, small red tricycle, tap and ballet dance costumes, tap shoes, drapes (new). Carol 482-3085.

Corvair engine, removed, complete, sell or trade, GMC/Chev engine, "six" rebuilt short block, 250 value, sell or trade w/ extras, Lindell, 471-4448.

Wheelchair occasional tables, coffee table, Jenny Lind single bed and chest, Magnavox stereo, formica dinette table, 4 chairs, kitchen utensils, 944-2317.

Elco model 460 5" Oscilloscope, audio signal generator, model TV50 A Genometer, package deal \$100, National NC300 Receiver, \$125, Reeves, 482-7233.

Ladies white cowboy boots w/ gold inlay design, size 9A, \$15, pant suits, dresses, slacks, blouses, shoes, evening clothes, lrg dog bd, snow skis, wigs, etc, 941-3777.

Double mattress and bx springs w/ six legs, \$20, double bed foam mattress, \$750, 941-3777.

Ham gear, Heath HW32A, 20-meter transceiver, nw, \$100, EICO Electronic Keyer, \$40, HW12A 75-meter transceiver, \$75, Lindsay, 488-0517.

Corolla 1200 and 1600 shop manuals complete, also clymer, '68 - '72 repair book for some, \$10 the lot, 471-0066.

Bargain on tires for cars and trucks, Chauvin, 468-2575 or 483-3977.

F78 X 14 fiberglass-belted whitewall tires, practically new, 5,000 mi, cost \$30, will sell for \$12.50, Jerry, 3561.

Electric Motor, 1 hp, 110/220, Moran 488-4086.

Kodak M28, super 8 movie camera, w/ zoom lens, \$50, Bishop, x3518.

3 contemp light fixtures, reasonable, 488-1682 aft 3 p.m.

Raleigh Professional bicycle frame, new, 24½", Campagnolo headset and bottom bracket, milk and silver, Ward, 488-0715.

### HOUSEHOLD ARTICLES

RCA 21" color tv, picture tube still in warranty, gd cndn, \$125, Bullock, 488-1042.

Color TV, RCA 15", portable, xlnt cndn, prft for bedroom, \$99.99, Garrison, 334-2108.

Washer, G. E. auto, rebuilt, top cndn, sell or trade, 471-4448.

Used stove, gas w/ grill, rotisserie, clock etc, gd working cndn, \$35, Scott, 483-2315 or 472-4588.

18,000 BTU air cndn, xlnt cndn, \$125, Becker, x4346 or 944-5118.

80,000 BTU cntrl furnace plus wall heater, make offer, Becker, 944-5118.

Sofa, custom made, tuxedo style, green nylon velvet, xlnt cndn, cost \$600, sell \$200, 488-2775.

Green-gold-white cut velvet early American style chair, li new, \$50 or best offr, Queen Anne lamp table, drk brown, single drawer \$30 or best offr, Goodman, 488-1458.

AMC frost-free refrigerator w/ separate freezer compartment, 5 yrs old, 12 cu ft, white, xlnt cndn, \$75 or bst offr, 433-4064.

Stereo, Silverstone, Mediterranean style, \$125, couch, 106", floral design, \$100, love seat, Early American Wing-back \$35, Marina, 488-4991 or 488-3282.

### VEHICLES

65 Chevy 2-dr, 6 cyl, stick, radio, tinted glass, gd tires, gd cndn, \$300, 921-6405 aft 7 p.m.

Olds 98, 69, loaded clean, gold, lux 4-dr Sedan, \$1985 cash or part trade on 67-6 Ford Pickup, 482-7698.

70 Jayco camper, lw profile, 8 sleeper, in-door/out door, range, sink, ice box, 2 water systems, surge brakes, porta-pattie, \$1350, 488-4466

66 Corvette, 4 speed, 2 tops, AM-FM, 327-300 hp, nw brakes, a/c, \$1550, Huffstetler, 334-3082.

Bikes, 2-24" middleweights, \$10 and \$20, Folding bike, \$20, 334-1895 aft 5 p.m. and weekends.

72 Honda sl-125, 1800 mi, 73 tags, xlnt li new, 334-1895 aft 5 pm and weekends. Camp trailer, 2-man, \$75, Haines, 941-2495.

71 Triumph Tiger, 650 cc, \$800, Lewis, 729-6785.

69 Buick LeSabre, 4 dr sedan, xlnt cndn, 1 owner, 5 nw tires, '73 tags, \$1625, 762-6338.

71 Mustang Grande, lt blue, dk blue vinyl top, loaded 29,000 mi, 626-0487 aft 6 p.m.  
69 Plymouth Barracuda, gd cndn, auto tran, a/c, radio, heater, 318 v-8, \$1100, 941-1876.

70 Binelli Buzzer Mini bike, 65 cc, w/ helmet, gd cndn, ideal for beginner, make an offr, 334-3303.

67 Jeep, 4-dr sta wgn, 4 whl dr, V-8, auto xmission, pwr str/brks, air, radio, Davidson, 333-2488.

70 Chrysler, New Yorker, 4-dr all pwr, auto temp, am/fm radio, stereo tape, ect, xlnt cndn, \$400 under market, Garrison, 334-2108.

71 Honda CL100, trailbike, 2 helmets and carrying rack, li new, \$425, 453-3261.

3-speed Austrian-blt bike, gd running cndn, \$20, 2-man rubber life raft with paddles, \$10, Griffin, 333-3512.

71 Wheel camper tent trailer, econoline, sleeps 8, sink, ice box, inside/outside stove, xlnt cndn, \$1095, Mike, 481-2995.

71 VW, 2 dr Sedan, 17,000 mi, xlnt cndn, radio, mst sell, Ed Svrcek, 946-7147.

For Rent, IFR Bonanza, \$20/hr, instrument rated pilots only, must fly 75-100 hrs/yr based Spxlnd, Lewis, 488-3265.

63 Buick LeSabre, pwr str and brakes, gd tires, \$275, 433-6371 aft 6 pm.

63 Buick Skylark, gd engine and body, nds U-joint, \$125, 433-6371 aft 6 pm.

72 Capri, 200 cc, air, radio, decor group, pwr disc brks, gd cndn, \$2400, Bobby, 433-0061 aft 5 pm.

63 Volkswagon, gd tires, gd cndn, \$350, Murray, 427-1380.

69 Fury III, 4-dr, vt ac, ps, \$1195, 946-7587.

72 Honda 90 Trail, 900 mi, \$300, Moran, 488-4086, 69 Honda 160, 3000 mi, looks and runs li nw, \$300, Moran, 488-4086.

63 Olds, F-85, 4-dr, auto, air, radio, gd wk car, nds trans repair bst offr, 488-3781 aft 5 pm.

66 VW "Squareback" stripped, prft for deer lease, lw mi, incl plans for conversion to camper, \$200, Samouce, 488-0406.

70 4-dr Dodge Cornet, 383, air, pwr, vinyl top, interior, 52,000 mi, \$1650, 332-2229.

70 Ford XL convertible, ps, pb, auto, air, am/fm stereo, \$1500, Legendre, 333-2976.

69 Ford Galaxie 500 4-dr, pwr str, pwr brakes, auto, air, xlnt cndn, 1 owner, \$1150, 461-0724 aft 6 pm.

10-Spd bike, Schwinn Continental, 25" frame (large) gd cndn, \$75, Finlayson, 333-3446.

69 Camaro V-8, auto, cnsl, bucket seats, ps, air, radial tires-cam puff, Durst, 474-2927.

68 Olds C/S, gld blk vinyl top and int, ps, pb, air, auto trans, tiltwheel, radio, \$1275, Larkin 483-2631, aft 5:30 946-8710.

Volkswagon bus, 68, xlnt cndn, nw motor, new tires, original owner, mst sell, dependable and economical family or student transportation, \$1395, 481-0095.

70 Suzuki F50 50cc motorbike helmet, new license, nw inspection, \$125, evenings aft 6 488-1467.

71 wheel camper tent trailer, sleeps 8, stove, ice box, sink, dble dinette, xlnt cndn, \$995, Mike, 481-2995.

72 Matador 304V8 station wagon, ac, p/s, lw mi, must sacrifice, Cost \$4295, sell \$2695, Drews 944-7632.

### BOATS

15' Skeeter bass boat w/ 2 swivel seats, little Dude trailer, Minkota troll motor, all in xlnt cndn, 35 hp Evinrude motor needs repair, \$650, 941-3777.

14' Quachita Jon boat, heavy gauge and 5½ hp Johnson motor, all or none, \$250, 946-1587.

14' boat-trailer-motor, quachita wide aluminum flat bottom, 25 hp Evinrude, 1972, less than 30 hours for quick sell, Garrison, 334-2108.

14' fiberglass boat w/ trailer, gd for fishing and skiing, make offr, Baldwin, 334-3303.

14' Scorpion sailboat w/ trlr, \$350, clean, cap 1 or 2 adults, Butler, 333-4764.

16' Glass Falcon boat, baitwell and storage, 40 hp Evinrude, selectric shift, pwr steering, elect start and generator, super tilt trailer, 1400 554-3414.

63 Cruisers Inc. 20' Merc cruiser, stern drive, 140 hp Chevy II engine, depth finder, Sportman trailer, electric wrench accessories, \$1500, 534-6649.

### PETS

Free puppies, 1 male, 3 female, mutt varieties (terrier) 2 fuzzy-wuzzies, 2 slick hair, ext 4241 or 3321815 aft 5 pm.

7 yr-old reg quarter horse and gear, guaranteed sound, not a child's horse, \$350, 585-6895.

8 wk-old pups, \$5, 3 males, 1 female, mother dachshund and beagle, 488-2150.

14 yr-old grade mare w/ saddle and bridle, \$125, 482-1664.

4 border collies, puppies, 2 male, 2 female, \$15 ea, 482-7835.

Laborator pups, AKC, 10 wks old, \$75, 479-1891 pm or wkends.

Cocker Spaniel puppies, blond, 1 male, 1 female, 4 mos old w/ papers, \$67.50 ea or \$125 pr, Peters, 534-3264.

### WANTED

Used gasoline Engine golf cart, Christensen, 488-5619.

### PROPERTY AND RENTALS

Dickinson Bayou, wooded lot, Bulkhead, boathouse, modern 3-2½-2, den, lrg fam room, fireplace, shag carpet, 64,000, 534-6772 or 534-6649.

CLC-Oakbrook 3-2-2, 6% loan, Del Webb 202 plan, paneled famroom, carpeted, draped, freshly painted, ovr 2100 sq ft, \$34,900, Doherty 488-0182.

Jamaica Beach corner lot, 80X130 on 100' wide canal, \$6,000 or highest bid, 483-3641 or 332-2982 nights.

Pearland, brick 3-bdrm, 1 bath, fncd yd, small equity, take up payments, \$122 monthly, aft 5, 482-2312.

Friendswood 3-2-2, lrg family area, nw carpet and exterior/interior paint, fenced, dog kennel, \$27,500, Howard, 482-7082.

Between Friendswood and Alvin, 3-2-2, central air/heat on ½ acre lot, Friendswood school district w/ bus at door, Chambliss, 483-5973 or 482-1532 aft 7 pm.

## Club Plans Trip

Plans for the NASA Employee's Club trip to Greece are still underway.

There is space on the flight which is scheduled to leave from Dulles Airport, Washington, D. C. en route to Athens, Greece on May 16, 1973 and return May 31, 1973.

The travel committee announced that there is still limited space available on the land tour; however, the three and four day cruises are full.

For reservations and information contact G. Degennaro, Code: FAP, NASA Headquarters; telephone number, 755-8541.

## ATTENTION!

A meeting will be held April 5, 1973, at 5:00 p.m., in building 13 room 108 for the purpose of organizing the Men's Softball League for 1973.

All teams that are interested in entering these leagues should have a representative at this meeting who is authorized to vote on rules and give preference to the week night desired for play.

Anyone interested in umpiring the games, should contact Mike Christensen at extension 3921 as soon as possible.

## Golf Season Begins

The 1973 golf season got underway on St. Patrick's day at Executive Golf Club for the first flight and group A of the new members of the JSC Golf Association.

Bob McDonald of Crew Systems carded an 89 (net 71) which put him in the club house as the leader of the first flight. Three players posted net 72's tying for second place. They were Pete Williams (86) of Flight Support Division; Stu Grissom (90) of Spacecraft Design Division and Jim Sanders (89) of Aircraft Experiment Project Office.

Steve Stockhom of Ellington who finished with an 80 for a net 69 tied for first place with John Opre of Quality Assurance Division who shot an 85.

Ken Backus of Ellington (75), Herb Miller of Lockheed (83) and George Duncan of Philco (85) ended up with net 72's for a three-way tie for third place.

Championship, second and group B. (new members) flighters will tee off March 31 at Executive

All JSC Golf Association members are scheduled to play at Sharpstown on April 14.

The first (organizational) meeting for both ground schools is planned for 5:15 p.m., April 2 in Building 2, Room 720. Contact Tom Giuli (X6467) or Jim McCoy (X5171) for further information.



With a string of SUGGESTIONS!

Mail Suggestion Form 624 to: AHS/AWARDS OFFICE

## Report Given

A status report on the Ambient Air Quality Study at JSC was given by a representative of the Life Sciences Directorate at a recent meeting of the JSC Pollution Control Committee.

It was reported that results for the calendar year 1972 indicated the ambient air in the JSC area to be well within the national primary standards.

Sampling and analysis were conducted for particulate matter and sulfur dioxide over the entire year while sampling and analysis for nitrogen dioxide commenced in July 1972.

The average results of 24-hour air samples were 45.7 ug/m3 (micrograms per cubic meter) for particulate matter, less than 25 ug/m3 for sulfur dioxide and 41 ug/m3 for nitrogen dioxide. The national primary standards are 75 ug/m3 for particulate matter, 80 ug/m3 for sulfur dioxide and 100 ug/m3 for nitrogen dioxide.

(Continued On Page 4)

# NASA Developed Life Raft Now Available to Public

A new lightweight, inflatable, non-tippable radar reflective life raft, now being used by the U. S. Coast Guard and being marketed commercially, was originally developed by NASA for American astronauts.

Now available to the world's navies, merchant marines, transoceanic air travelers and pleasure boatmen, the new sea rescue equipment was developed for the commercial market by Robert F. Perchard, a research biologist.

Perchard's son, a Coast Guard search pilot, died in 1964 after exposure in a life raft following a crash at sea off Alaska. His loss prompted his father's one-man quest to improve water survival gear.

After years of effort and unsuccessful attempts by several firms to bring a satisfactory raft to the industrial market, Perchard was able to develop rescue equipment meeting his specification, ultimately obtaining an exclusive license to produce it commercially.

## MANY FEATURES

The improved raft is circular in shape and incorporates many significant features for promoting human survival:

—Constructed from lightweight fabric, it is provided with fabric ballast buckets, insuring maximum stability when inflated by its carbon dioxide cylinders.

—Boarding grips provide assistance in entering the raft from the water.

—When fully inflated, the raft has a radar-reflective orange canopy covering its entire area and enclosing half (180 degrees) of its perimeter.

—The other perimeter half can be left open for ventilation or closed by a zippered curtain of the radar-reflective fabric, which can also be configured to serve as a catch basin for rain water, or as a vent tube. The canopy and curtain have excellent thermal properties for insulation against cold or heat and are radar-reflective and colored for maximum visibility.

—Deflated, the raft is enclosed in a compact weather-proof fiberglass or soft-pack fabric carry case, occupying minimum space aboard ships and aircraft. Smallest fully equipped models of the raft weigh 60 pounds and measure 20x14x60 inches.

## DIFFERENT SIZES

The raft is equipped with a trailer drogue to bring the open side into the wind. It is manufactured in a variety of sizes, with capacities of 4, 6, 8, 10, or 12 persons. Prices per unit range from \$600 to \$1200.

An early version of the life raft was developed at NASA's Langley Research Center in 1959-1961 as part of the manned spacecraft onboard survival kit for astronauts. This raft was

eventually used by astronaut Scott Carpenter May 24, 1962, following splashdown after his Mercury Aurora 7 space flight.

## EASIER TO SIGHT

One of Perchard's prime concerns was obtaining a commercially practical radar-reflective fab-

ric featuring high detectability and affording maximum thermal protection. He engaged King-Seeley Thermos Company, Win-

chester, Mass., to undertake its development, resulting in a radar-reflective, orange dyed metallized polyester film bonded to a tear-resistant fabric.

It sparkles in sunlight and has proved much easier to detect from rescue airplanes or ships than the materials in conventional rescue equipment.

The fabric-backed film can be used for life jackets, ponchos, cushions and other rescue and sports gear.

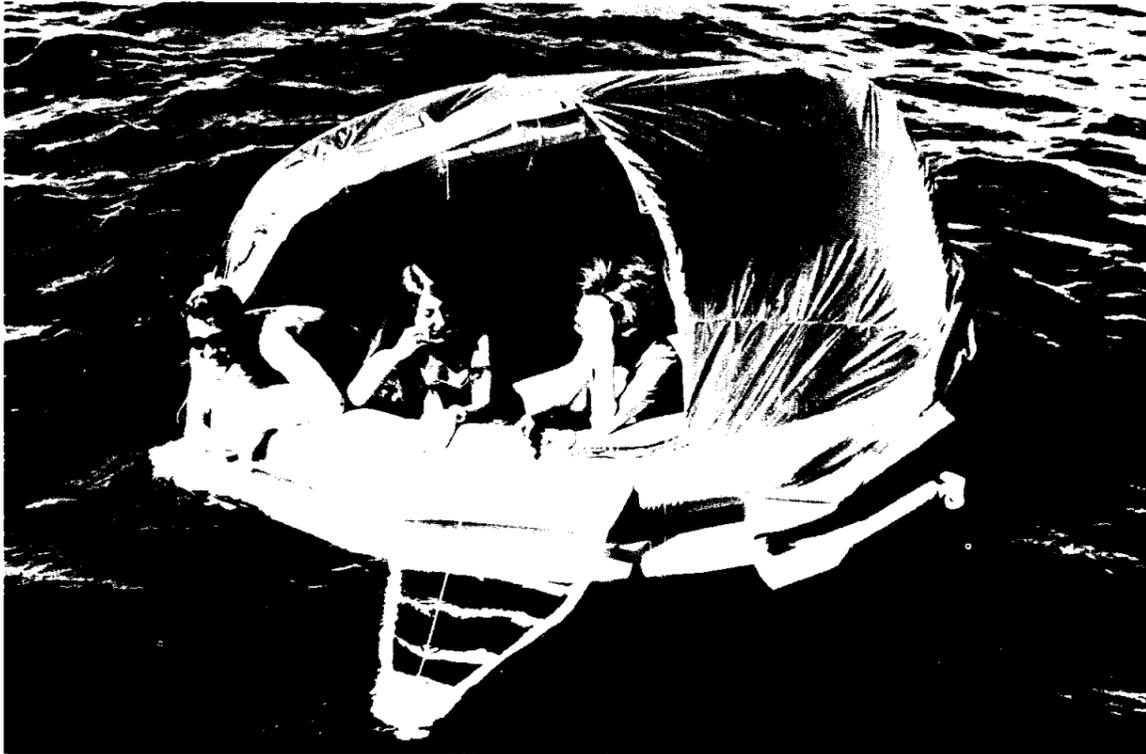
For production of the complete raft, Perchard granted an exclusive sub-license to the Winslow Company, Osprey, Fla. in June 1972. Besides producing the life raft for sale in the commercial market, and to the government, the firm also produces anti-exposure ponchos made from the reflective material.

## UNDERGOING FAA TESTS

The Coast Guard has purchased a quantity of the rafts for use aboard its icebreakers and is continuing to test the rescue equipment aboard many of its other vessels. A number of rafts is currently being purchased by the Federal Aviation Administration for further testing.

Preliminary data indicate that the floating raft with its reflective canopy is detectable by aircraft radar at distances of 15 miles. A man, floating on the water surface equipped with a life jacket fitted with a hood made from the reflective fabric, has been spotted by an airplane flying at 6,000 feet.

Hailed as a "breakthrough for survival" by a leading boating magazine, Perchard's equipment is expected to have wide use by owners of pleasure craft as well as aboard commercial ships and planes.



SPACE TECH USED IN LIFERAFT—A new lightweight, inflatable, nontippable radar reflective life raft, now being used by the U.S. Coast Guard and being marketed commercially, was originally developed by NASA for American astronauts.

## JSC Employees to Participate in SWIEECO Conference

The 1973 Southwestern Institute of Electrical and Electronics Engineers Conference and Exhibition will be held in the main ballroom of the Astroworld Hotel, Houston, Texas, April 4 - 6, 1973.

SESSIONS III-B: SKYLAB EXPERIMENT SYSTEMS (invited session - Sponsored by Johnson Space Center) will be held Thursday, April 5, 9:30 a.m. - 12:00 noon. This session has been organized and will be chaired by Mr. Donald G. Wiseman, Assistant Division Chief of the Aeronautics Systems Engineering

Division. Mr. Arnold D. Aldrich, Deputy Manager of the Skylab Program will give a brief familiarization of Skylab equipments and missions. Subsequently, individual briefings will be presented relative to the Apollo Telescope Mount experiments and the Earth Resources Experiment Package experiments.

Other JSC papers are to be presented—one at Session I-C: Wave Propagation, Session scheduled for Wednesday, April 4, 9:00 a.m. - 12:00 noon; another at Session III-C: Antennas and

Microwave System, Session scheduled for Thursday, April 5, 9:30 a.m. - 12:00 noon.

A special evening feature scheduled for Wednesday, April 4, 8:00 p.m. - 9:15 p.m. will be two NASA JSC films: "Life Sciences at the Johnson Space Center," and "Skylab."

Fifteen thousand programs have been distributed to Region V IEEE members in Texas, Oklahoma, Arkansas, Louisiana, and New Mexico. Programs can be obtained by calling Mr. Jim Evans at X6193.

## Report

(Continued From Page 3)

Furthermore, the highest concentrations, detected, 95 ug/m<sup>3</sup> for particulate matter and 25 ug/m<sup>3</sup> for sulfur dioxide, were also within the national primary standards for maximum 24-hour concentrations, which are 260 ug/m<sup>3</sup> for particulate matter and 365 ug/m<sup>3</sup> for sulfur dioxide. A maximum 24-hour standard for nitrogen dioxide is not defined.

In the future, sampling and analysis for carbon monoxide and photochemical oxidants may also be included in the study.

## NASA Will Expand Minority Program

NASA is planning to expand its program of sponsored research at four-year colleges and universities having predominantly minority enrollments.

About 100 institutions have been invited to consider whether and how they might choose to participate.

Most of NASA's sponsored research has been conducted at university graduate schools. This practice tended to bar participation by institutions with largely minority enrollments because they lacked graduate departments.

In 1969, NASA began to involve these minority schools in aeronautical and space research projects, and since that time 25 schools have participated.

NASA is now seeking to at least double the number of participating minority institutions, and to expand about 5 per cent of the total basic and applied university

research funds with such schools. This target would correspond to the roughly 5 per cent proportion of minority colleges in the overall higher education community.

The expanded program was developed in cooperation with the National Association for Equal Opportunity in Higher Education.

Proposals for awards under the program must be relevant to NASA's mission and contribute to the solution of problems of concern to the agency.

## A Note Of Thanks

A note of thanks to the many JSC employees who donated blood for my wife's recent surgery. She continues to improve daily. The kindness of the Blood Bank officers, members, and new donors, was appreciated by the William J. Forsyth family.

*Wm. J. Forsyth*

## Slayton To Be Special Guest

Astronaut Donald K. Slayton will be among the special guests at the Seventh Annual Reunion of the Missile, Space and Range Pioneers on April 13, 1973. The reunion will be held in the Gemini Room, Atlantis Beach Lodge, Cocoa Beach, Florida.

The Pioneers are the men and women who have been involved with the missile and space programs of the United States in some manner between the late 1940's until the end of July 1969.

The Reunion begins at noon with the opening of the hospitality suites for Missile, Space and Range pioneers and their guests. The hospitality suites provide the members an opportunity to "get together and discuss old times," which is the purpose of the organization.

The theme of this year's reunion will be "Space Benefits for Mankind."